

In the specification:

Delete the paragraph beginning at page 75, line 15, and replace it with the following paragraph:

Fig. 7G shows the NAc in the CNS reward region 726 being activated in response to a painful (i.e. 46°C) thermal stimulus. The size and color coding of the activation areas are similar to the coding described above in conjunction with Fig. 7A. The red colored shaded response depicted in Fig. 7G indicates a highly significant statistical activation in the NAc.

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Delete the paragraph beginning at page 78, line 3, and replace it with the following paragraph:

Referring now to Fig. 8A, an image of an anterior cingulate gyrus (aCG) having an activation 750 in response to a 41°C thermal stimulus is shown. The thermal stimulus is delivered to a subject using a Peltier based thermode. It should be appreciated of course that any thermal mechanical, chemical device can be used to produce pain. The size and color shading of the aversion shown in Fig. 8A indicate the relative extent and statistical significance respectively within each region. The size of the region corresponds to the amount of activation in a volume in the aCG. Thus, a relatively small size corresponds to a relatively low activation volume in the aCG while a relatively large size corresponds to a relatively large activation volume in the aCG.

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Also, a region having a blue color darker shading indicates a less significant activation while a region having a red or yellow color a lighter shading indicates a more significant activation. Other models of sensitization produced thermal, mechanical, chemical stimuli could be used, for example prolonged hot thermal stimulus or mustard oil or any stimulus well known to those of ordinary skill in the art into the subject to produced by hyperalgesia could be used

Delete the paragraph beginning at page 85, line 10, and replace it with the following paragraph:

Referring now to Fig. 10C, an image of an NAc region 800 in response to a 46°C thermal stimulus being applied to a subject infused with morphine is shown. The thermal stimulus is delivered to a subject using a Peltier based thermode. The morphine dose was 4mg/70kg. The size and ~~color~~-shading of the activations shown in Fig. 10C indicate the relative extent and statistical significance respectively within each region. The size of the ~~colored~~-shaded region corresponds to the amount of activation volume in the NAc. Thus, a relatively small size corresponds to a relatively low activation volume in the NAc while a relatively large size corresponds to a relatively high activation volume in the NAc. Also, a region having a blue ~~color~~-darker shading indicates a less significant activation while a region having a red or yellow ~~color~~-lighter shading indicates a more significant activation.

(13) Delete the paragraph beginning at page 106, line 5, and replace it with the following paragraph:

C4 Referring now to Fig. 14A, an image of a NAc having an activation 1400 in response to a brush stimulus is shown. The brush stimulus is delivered to a subject using a camel hair brush. The size and ~~shading~~ ~~color~~-of the activation shown in Fig. 14A indicate the relative extent and statistical significance respectively within each region. The size of the ~~colored~~-shaded region corresponds to the amount of activation volume in the NAc. Thus, a relatively small size corresponds to a relatively low activation volume in the NAc while a relatively large size corresponds to a relatively large activation volume in the NAc . Also, a region having a blue ~~color~~-darker shading indicates a less significant activation while a region having a red or yellow ~~color~~-lighter shading indicates a more significant activation.